CLAIMS

1. An optical sensor comprising: a substrate having an electrode; a photodetector electrically connected to the electrode; and a light-transmissive resin encapsulating portion for encapsulating the photodetector on the substrate, the optical sensor characterized by further comprising an infrared-blocking layer either inside the light-transmissive resin encapsulating portion or on an outer surface of the light-transmissive resin encapsulating portion for blocking infrared radiation from the outside from reaching the photodetector.

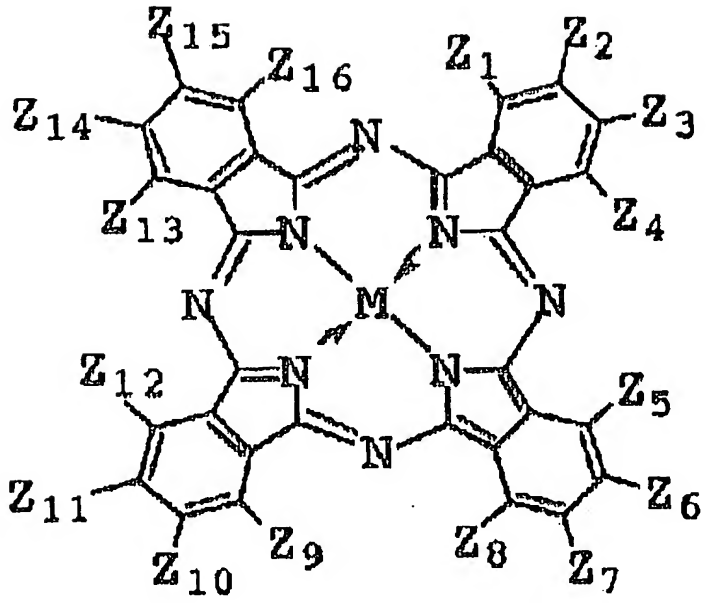
2. An optical sensor comprising: a substrate having an electrode; a photodetector electrically connected to the electrode; and a light-transmissive resin encapsulating portion for encapsulating the photodetector on the substrate, the optical sensor characterized in that the light-transmissive resin encapsulating portion contains an infrared-absorbing substance.

3. The optical sensor as set forth in claim 1, wherein the infrared-blocking layer is formed on the outer surface of the light-transmissive resin encapsulating portion and is either an infrared-absorbing layer containing an infrared-absorbing substance or an infrared-reflecting layer containing an

infrared-reflecting substance.

4 The optical sensor as set forth in claim 1, wherein the light-transmissive resin encapsulating portion has an inner resin portion for encapsulating the photodetector and an outer resin portion for covering the inner resin portion and wherein the infrared-blocking layer is interposed between the inner resin portion and the outer resin portion and is either an infrared-absorbing layer containing an infrared-absorbing substance or an infrared-reflecting layer containing an infrared-reflecting substance.

5. The optical sensor as set forth in any one of claims 2 to 4, wherein the infrared-absorbing substance is a phthalocyanine compound represented by the general formula (I):



(I)

wherein Zi (i=1-16) is SR_1, OR_2, NHR_3 or a halogen atom, wherein R_1, R_2 and R_3 are a phenyl group which may have substituent(s), an aralkyl group which may have substituent(s) or a C_1-C_{20} alkyl group which may have substituent(s); and M is a nonmetal, a metal, a metallic oxide or a metallic halide.

6. The optical sensor as set forth in any one of claims 1 to 5, further comprising a light-shielding frame for covering all the outer surfaces of the light-transmissive resin encapsulating portion except an outer surface thereof on a light-receiving surface side of the photodetector.

7. The optical sensor as set forth in any one of claims 1 to 6, wherein the transmittance of the light-transmissive resin encapsulating portion in the visible-light region is

substantially constant in the range of blue light (450 nm) to red light (650 nm).

8. The optical sensor as set forth in any one of claims 2 to 7, containing two or more different infrared-absorbing substances.

9. The optical sensor as set forth in claim 8, wherein the two or more different infrared-absorbing substances are phthalocyanine compounds having absorption peaks at different infrared wavelengths.

10. The optical sensor as set forth in claim 9, wherein the infrared-absorbing substances are phthalocyanine compounds having absorption peaks in the range of wavelengths of 750 nm to 1000 nm.

11. The optical sensor as set forth in any one of claims 1 to 10, wherein the photodetector is a Si phototransistor.

12. A process of producing an optical sensor, comprising the steps of: electrically connecting a photodetector to an electrode provided on a substrate; and forming a light-transmissive resin encapsulating portion on the substrate so that the photodetector is entirely encapsulated in the

light-transmissive resin encapsulating portion, the process characterized in that the step of forming the light-transmissive resin encapsulating portion includes the step of forming an infrared-blocking layer either inside the light-transmissive resin encapsulating portion or on an outer surface of the light-transmissive resin encapsulating portion for blocking infrared radiation from the outside from reaching the photodetector.

13. A process of producing an optical sensor, comprising the steps of: electrically connecting a photodetector to an electrode provided on a substrate; and forming a light-transmissive resin encapsulating portion on the substrate so that the photodetector is entirely encapsulated in the light-transmissive resin encapsulating portion, the process characterized in that in the step of forming the light-transmissive resin encapsulating portion, the light-transmissive resin encapsulating portion is formed of a transparent resin containing an infrared-absorbing substance.

14. The process of producing an optical sensor as set forth in claim 12, wherein the step of forming the infrared-blocking layer includes forming, on the outer surface of the light-transmissive resin encapsulating portion, either an infrared-absorbing layer containing an infrared-absorbing

substance or an infrared-reflecting layer containing an infrared-reflecting substance.

15. The process of producing an optical sensor as set forth in claim 12, wherein the step of forming the resin encapsulating portion includes the steps of: forming an inner resin portion for encapsulating the photodetector; forming the infrared-blocking layer for covering an outer surface of the inner resin portion with either an infrared-absorbing layer containing an infrared-absorbing substance or an infrared-reflecting layer containing an infrared-reflecting substance; and forming an outer resin portion for covering an outer surface of either the infrared-absorbing layer or the infrared-reflecting layer.

16. The process of producing an optical sensor as set forth in any one of claims 12 to 15, further comprising the step of forming a light-shielding frame for covering all the outer surface of the light-transmissive resin encapsulating portion except an outer surface thereof on a light-receiving surface side of the photodetector, the step of forming the light-shielding frame being carried out before the step of forming the resin encapsulating portion.

17. The process of producing an optical sensor as set

forth in any one of claims 12 to 16, wherein the step of forming the resin encapsulating portion comprises: holding the substrate, having a plurality of said photodetectors mounted thereon, between an upper mold and a lower mold, the upper mold having, in correspondence with the photodetectors, a plurality of recesses to be used for formation of the light-transmissive resin encapsulating portion; pouring a light-transmissive resin into the recesses inside the mold; and then curing the resin thereby to form the resin encapsulating portions.

18. A light-transmissive resin composition both for an optical sensor filter and for encapsulating a photodetector of an optical sensor, the light-transmissive resin composition having an infrared radiation blockage function provided by addition of a plurality of phthalocyanine dyes as infrared-absorbing substances to a light-transmissive resin.